IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A purified protein, comprising ~~characterized in that:~~

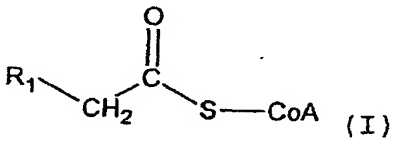
a) ~~it has~~ at least 40% identity, over its entire sequence, with the Pks13 protein of *M. tuberculosis* (SEQ ID NO: 1); and

b) ~~it has~~ an acyltransferase domain (pfam00698), a keto acyl synthase domain (pfam02801 or pfam00109), at least one acyl carrier protein domain (COG0331 or COG0304), and a thioesterase domain (COG3319 or pfam00975); wherein

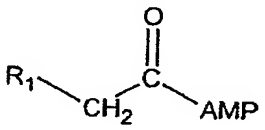
c) ~~it catalyzes~~ the purified protein catalyzes a Claisen condensation or malonic condensation between an acyl-CoA or acyl-AMP molecule and an acylmalonyl-CoA molecule.

Claim 2 (Currently Amended): The purified protein ~~as claimed in~~ of claim 1, wherein the purified protein ~~characterized in that it~~ catalyzes a Claisen condensation or malonic condensation between:

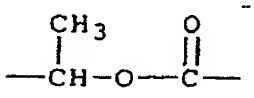
a) an acyl-CoA molecule of formula I, or an acyl-AMP molecule of formula Ia:



(I)



(Ia)

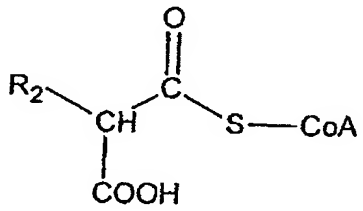
~~in which~~ wherein R_1 is a chain comprising from 6 to 68 carbon atoms, which may ~~contain~~ comprise one or more C=C double bonds, ~~and/or~~ one or more ~~cis/trans~~ cis, trans, or cis and trans-cyclopropane rings, ~~and/or~~ one or more groups 

, or a

combination thereof, ~~and/or~~ and which may carry one or more side groups ~~chosen~~ selected from the group consisting of ~~from~~ $-CH_3$, =O and $-O-CH_3$;

and

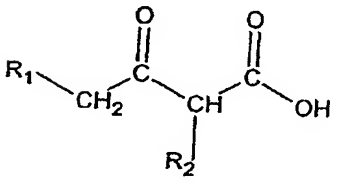
b) an acylmalonyl-CoA molecule of formula II:



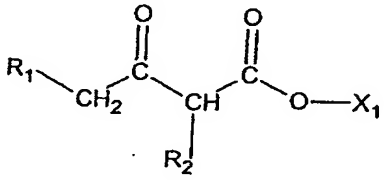
(II)

~~in which~~ wherein R_2 is a linear alkane comprising from 10 to 24 carbon atoms;

so as to form a β-keto acyl intermediate of formula III, or a β-keto ester of formula IIIa:



(III)



(IIIa)

~~in which~~ wherein R_1 and R_2 are as defined above, and X_1 is an acceptor molecule.

Claim 3 (Currently Amended): The purified protein of claim 1 ~~as claimed in either one of claims 1 and 2, characterized in that it exhibits~~ comprising at least 70% identity with the sequence SEQ ID No.: 1 from *Mycobacterium tuberculosis*.

Claim 4 (Currently Amended): The protein of claim 2, ~~as claimed in either one of claims 1 and 2, characterized in that it exhibits~~ further comprising at least 70% sequence identity with the sequence SEQ ID No.: 2 from *Corynebacterium glutamicum*.

Claim 5 (Currently Amended): An expression vector, ~~characterized in that it comprises~~ comprising a polynucleotide sequence encoding [[a]] the protein ~~as claimed in any one of claims 1 to 4~~ of claim 1.

Claim 6 (Currently Amended): A host cell~~, characterized in that it is~~ transformed with [[an]] the expression vector ~~as claimed in~~ of claim 5.

Claim 7 (Currently Amended): The host cell ~~as claimed in~~ of claim 6, ~~characterized in that it~~ wherein the host cell is a prokaryotic cell.

Claim 8 (Currently Amended): A method for obtaining a protein, wherein the protein comprises

a) at least 40% identity, over its entire sequence, with the Pks13 protein of *M. tuberculosis* (SEQ ID NO: 1); and

b) an acyltransferase domain (pfam00698), a keto acyl synthase domain (pfam02801 or pfam00109), at least one acyl carrier protein domain (COG0331 or COG0304), and a thioesterase domain (COG3319 or pfam00975); wherein

c) the purified protein catalyzes a Claisen condensation or malonic condensation between an acyl-CoA or acyl-AMP molecule and an acylmalonyl-CoA molecule, comprising

~~as claimed in any one of claims 1 to 4, characterized in that it comprises:~~

[[-]] culturing [[a]] the host cell ~~as claimed in either one~~ of of claim 6 ~~claims 6 and 7~~; and

[[-]] purifying ~~said~~ the protein from ~~said~~ the culture.

Claim 9 (Currently Amended): ~~Method~~ A method for inhibiting the biosynthesis of ~~the~~ a mycolata envelope in a bacterium, ~~characterized in that it comprises~~ comprising inhibiting, in ~~said~~ the bacterium ~~bacteria~~, the expression or the activity of [[a]] the protein ~~as claimed in any one of claims 1 to 4~~ of claim 1, thereby inhibiting the mycolata envelope biosynthesis.

Claim 10 (Currently Amended): ~~The use of a protein as claimed in any one of claims 1 to 4, for screening for antibiotics that are active on mycolata~~ A method of screening for an antibiotic against bacteria that must synthesize mycolic acids to be viable, comprising obtaining a transformed bacterium capable of surviving without producing mycolic acids, culturing the bacterium, on an medium comprising agar and a compound, to form colonies, and observing the appearance of the colonies, such that if the morphology of the colonies goes from a shiny smooth appearance to a rough appearance, the compound is an antibiotic.

Claim 11 (Currently Amended): The ~~use as claimed in~~ method of claim 10, ~~for screening for~~ wherein the ~~antibiotics that are active on~~ bacteria that must synthesize mycolic acids to be viable are mycobacteria.

Claim 12 (New): The purified protein of claim 1, wherein the purified protein catalyzes a Claisen condensation between the acyl-CoA molecule and the acylmalonyl-CoA molecule.

Claim 13 (New): The purified protein of claim 1, wherein the purified protein catalyzes a Claisen condensation between the acyl-AMP molecule and the acylmalonyl-CoA molecule.

Claim 14 (New): The purified protein of claim 1, wherein the purified protein catalyzes a malonic condensation between the acyl-CoA molecule and the acylmalonyl-CoA molecule.

Claim 15 (New): The purified protein of claim 1, wherein the purified protein catalyzes a malonic condensation between the acyl-AMP molecule and the acylmalonyl-CoA molecule.

Claim 16 (New): The purified protein of claim 2, wherein the purified protein catalyzes a Claisen condensation between the acyl-CoA molecule of formula I and the acylmalonyl-CoA molecule of formula II.

Claim 17 (New): The purified protein of claim 2, wherein the purified protein catalyzes a Claisen condensation between the acyl-AMP molecule of formula Ia and the acylmalonyl –CoA molecule of formula II.

Claim 18 (New): The purified protein of claim 2, wherein the purified protein catalyzes a malonic condensation between the acyl-CoA molecule of formula I and the acylmalonyl-CoA molecule of formula II.

Claim 19 (New): The purified protein of claim 2, wherein the purified protein catalyzes a malonic condensation between the acyl-AMP molecule of formula Ia and the acylmalonyl –CoA molecule of formula II.

Claim 20 (New): An expression vector comprising a polynucleotide sequence encoding the protein of claim 2.